

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below.

Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered). Please AMEND the claims the in accordance with the following:

Please AMEND the claims as noted below.

Listing of the Claims

1. (Currently Amended) A nucleic acid having a nucleotide sequence ~~encoding a protein having the activity for vacuolar compartmentalization of flavonoids in plant cells, said nucleotide sequence being~~ selected from the group consisting of:

(i) the nucleotide sequence represented by SEQ ID NO:1 or a nucleotide sequence which is degenerate with respect to SEQ ID NO:1;

(ii) a nucleotide sequence which is identical to SEQ ID NO:1 except that it has deletions, substitutions or additions of one or more bases;

(iii) a nucleotide sequence hybridizable under stringent conditions with a nucleotide sequence complementary to the nucleotide sequence represented by SEQ ID NO:1; and

(iv) a nucleotide sequence having at least 60% nucleotide sequence identity to the nucleotide sequence represented by SEQ ID NO:1;

wherein the nucleotide sequence encodes a protein having activity for vacuolar compartmentalization of flavonoids in plant cells.

2. (Currently Amended) A nucleic acid encoding a protein having ~~the activity for vacuolar compartmentalization of flavonoids in plant cells, said protein comprising~~ an amino acid sequence selected from the group consisting of:

(a) the amino acid sequence represented by SEQ ID NO:2;

(b) an amino acid sequence which is identical to SEQ ID NO:2 except that it has deletions, substitutions or additions of one or more amino acids; and

(c) an amino acid sequence that has at least 60% amino acid sequence identity to the amino acid sequence represented by SEQ ID NO:2,

wherein the protein has activity for vacuolar compartmentalization of flavonoids in plant cells.

3. (Withdrawn) A protein that is encoded by the nucleic acid according to claim 1 and which has the activity for vacuolar compartmentalization of flavonoids in plant cells.

4. (Previously Presented) A recombinant vector containing the nucleic acid according to claim 1.

5. A transformed plant cell containing the recombinant vector according to claim 4.

6. (Previously Presented) A transgenic plant containing the nucleic acid according to claim 1.

7. (Previously Presented) A process for producing flavonoids which comprises the steps of cultivating the transformed plant cell of claim 5 in a culture medium and harvesting a vacuolarly accumulated flavonoid from the cultured transformed plant cell or the grown transgenic plant.

8. (Withdrawn) A protein that is encoded by the nucleic acid according to claim 2 and which has the activity for vacuolar compartmentalization of flavonoids in plant cells.
9. (Previously Presented) A recombinant vector containing the nucleic acid according to claim 2.
10. (Previously Presented) A transformed plant cell containing the recombinant vector according to claim 9.
11. (Previously Presented) A transgenic plant containing the nucleic acid according to claim 2.
12. (Previously Presented) A process for producing flavonoids which comprises the steps of cultivating the transformed plant cell of claim 10 in a culture medium and harvesting a vacuolarly accumulated flavonoid from the cultured transformed plant cell or the grown transgenic plant.
13. (Previously Presented) A process for producing flavonoids which comprises the steps of growing the transgenic plant of claim 6 and harvesting a vacuolarly accumulated flavonoid from the cultured transformed plant cell or the grown transgenic plant.
14. (Previously Presented) A process for producing flavonoids which comprises the steps of growing the transgenic plant of claim 11 and harvesting a vacuolarly accumulated flavonoid from the cultured transformed plant cell or the grown transgenic plant.
15. (New) A nucleic acid having a nucleotide sequence selected from the group consisting of:

(i) the nucleotide sequence represented by SEQ ID NO:1 or a nucleotide sequence which is degenerate with respect to SEQ ID NO:1;

(ii) the nucleotide sequence which is identical to SEQ ID NO:1 except that it has deletions, substitutions or additions of one or more bases;

(iii) the nucleotide sequence hybridizable under stringent conditions with a nucleotide sequence complementary to the nucleotide sequence represented by SEQ ID NO:1; and

(iv) the nucleotide sequence having at least 80% nucleotide sequence identity to the nucleotide sequence represented by SEQ ID NO:1.

16. (New) The nucleic acid of claim 15, wherein the nucleotide sequence encodes for a protein having activity for vacuolar compartmentalization of flavonoids in plant cells.

17. (New) The nucleic acid of claim 15, wherein the nucleic acid has at least 90% nucleotide sequence identity to the nucleotide sequence represented by SEQ ID NO:1.

18. (New) The nucleic acid of claim 17, wherein the nucleotide sequence encodes for a protein having activity for vacuolar compartmentalization of flavonoids in plant cells.

19. (New) The nucleic acid of claim 15, wherein the nucleic acid sequence is represented by SEQ ID NO:1.

20. (New) A nucleic acid encoding a protein comprising:
an amino acid sequence selected from the group consisting of:
(a) the amino acid sequence represented by SEQ ID NO:2;
(b) the amino acid sequence which is identical to SEQ ID NO:2 except that it has deletions, substitutions or additions of one or more amino acids; and

(c) the amino acid sequence that has at least 80% amino acid sequence identity to the amino acid sequence represented by SEQ ID NO:2.

21. (New) The nucleic acid of claim 20, wherein the amino acid sequence that has at least 90% amino acid sequence identity to the amino acid sequence represented by SEQ ID NO:2.

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